

What is claimed is:

1. A light-transmitting module, comprising:

a stack of a metallic block, an insulating heat sink mounted on said metallic block and an electrically conductive layer formed on said insulating heat sink, said stack forming a parallel-plate capacitor; and

a laser diode having an anode and a cathode, said laser diode being mounted on said conductive layer such that said anode faces and is in contact with said conductive layer.

2. The light-transmitting module according to claim 1, wherein a capacitance of said parallel-plate capacitor is at least 50 pF.

3. The light-transmitting module according to claim 1, wherein said laser diode includes an n-type substrate and a plurality of epitaxial layers of an n-type cladding layer, an active layer, and a p-type cladding layer grown on said n-type substrate, said p-type cladding layer corresponding to said anode and said n-type substrate corresponding to said cathode, said laser diode being mounted on said conductive layer such that said plurality of epitaxial layers faces and is in contact with said conductive layer.

4. The light-transmitting module according to claim 1, wherein said laser diode includes an p-type substrate and a plurality of epitaxial layers of a p-type cladding layer, an active layer, and an n-type cladding layer grown on said p-type substrate, said n-type cladding layer corresponding to said cathode and said p-type substrate corresponding to said anode, said laser diode being mounted on said conductive layer such that said p-type substrate faces and is in contact with

said conductive layer.

5        5. The light-transmitting module according to claim 1, further comprises a driver for driving said laser diode, said driver being mounted on said conductive block.

6. A light-transmitting module, comprising:  
a stack of an electrically conductive heat sink, an insulating layer provided on said heat sink and an electrically conductive layer, said stack  
10        forming a parallel-plate capacitor; and  
a laser diode mounted having an anode and a cathode, said laser diode being mounted on said conductive layer such that said anode faces and is in contact with said conductive layer.

15        7. The light-transmitting module according to claim 6, wherein a capacitance of said parallel-plate capacitor is at least 50 pF.

8. The light-transmitting module according to claim 6, wherein said laser diode includes an n-type substrate and a plurality of epitaxial layers of an n-type  
20        cladding layer, an active layer, and a p-type cladding layer grown on said n-type substrate, said p-type cladding layer corresponding to said anode and said n-type substrate corresponding to said cathode, said laser diode being mounted on said conductive layer such that said epitaxial layers faces and are in contact with said conductive layer.

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9. The light-transmitting module according to claim 1, wherein said laser

diode includes an p-type substrate and a plurality of epitaxial layers of a p-type cladding layer, an active layer, and an n-type cladding layer grown on said p-type substrate, said n-type cladding layer corresponding to said cathode and said p-type substrate corresponding to said anode, said laser diode being mounted on  
5 said conductive layer such that said p-type substrate faces and is in contact with said conductive layer.

10 10. The light-transmitting module according to claim 6, wherein said heat sink is made of copper tungsten.

11. The light-transmitting module according to claim 6, wherein said heat sink is made of silicon.

15 12. The light-transmitting module according to claim 6, wherein said insulating layer is made of material selected from a group of silicon oxide, silicon nitride, or silicon oxi-nitride.

20 13. The light-transmitting module according to claim 6, further comprises an electrically conductive and grounded block, said heat sink being mounted on said conductive block.

25 14. The light-transmitting module according to claim 13, further comprises a driver for driving said laser diode, said driver being mounted on said conductive block.

15. The light-transmitting module according to claim 6, wherein said heat

sink further includes a groove for securing an optical fiber.

16. The light-transmitting module according to claim 15, wherein said  
heat sink further includes another groove for securing a ferrule, said optical fiber  
5 being secured by said ferrule.

17. The light-transmitting module according to claim 14, further  
comprises a driver for driving said laser diode, said driver being mounted on said  
heat sink.